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FARMERS' BULLETIN No. 1015 *Rev.*
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PRODUCING FAMILY AND FARM SUPPLIES ON THE COTTON FARM



HOME PRODUCTION OF SUPPLIES offers the southern farm family an easy way to reduce the cost of living.

Because of the long growing season, and the short, mild winters of the Cotton Belt, garden vegetables may be grown there in abundance throughout the year with little labor and at trifling expense.

Necessary live-stock products and feeds for farm animals can be produced on the farm much more cheaply than they can be bought.

This bulletin suggests ways in which southern farmers may make the most of opportunities for the home production of commodities that otherwise would necessitate cash outlay.

Washington, D. C.

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PRODUCING FAMILY AND FARM SUPPLIES ON THE COTTON FARM.

By C. L. GOODRICH, *assistant farm economist, Office of Farm Management and Cost of Production, Bureau of Agricultural Economics.*

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THE VITAL FACTORS of comfortable farm life are food, shelter, and fuel, and so far as these are present in quantity and quality beyond the necessities for mere existence the standard of living and the consequent health and happiness of the family increased.

Because of the long growing season, and the short, mild winters of the Cotton Belt, garden vegetables may be grown there in abundance throughout the year with little labor and at trifling expense. Necessary live-stock products and feeds for farm animals can be produced on the farm more cheaply than they can be bought.

Aside from the hygienic and social values, the abundance of the living furnished to the family by the farm is among the important factors that determine the amount of the net income of the farm and the safety and profitableness of the business. Hence the degree to which the farm is furnishing the family food and the farm feed should be one of the first tests of efficiency in farm management. On small farms the living furnished without money cost is often a vital matter, since the cash return of such farms is relatively small.

IMPORTANCE OF HOME PRODUCTION OF SUPPLIES.

In a group of 106 farms in Brooks County, Ga., in a community that makes a specialty of producing the farm food and farm feeds, the families in 1914 consumed food ranging in value from \$104 to \$1,283 per family, averaging \$526. Approximately 85 per cent of this food was produced on the farm. That part of the food produced on the farm constituted an average of 18 per cent of the net income of farms having 250 acres or more of crop land and 48 per cent of the net income of farms having less than 75 acres of crop

land. (See United States Department of Agriculture Bulletin No. 648.)

On 149 farms fairly evenly distributed in Gaston County, N. C., Troup County, Ga., and McLennan County, Tex., the average family consumed food to the value of \$454. Of this 69 per cent was produced on the farm. (See United States Department of Agriculture Bulletin No. 410.)

The family garden and family live stock, which supply the larger part of the family food, are usually cared for at times when the work interferes comparatively little with the regular farm enterprises, and largely by labor that would otherwise be idle. Consequently these supplies can usually be produced on most farms at less cost than if they were bought elsewhere.

When a farmer makes a practice of producing the family food on the farm, this item, plus fuel and shelter furnished by the farm, has a value equal to the interest on the investment or rent for the entire farm up to a considerable size of business.

In the group of farms in Brooks County, Ga., mentioned above, the average value of food, fuel, and shelter furnished the family on farms of less than 75 acres of crop land was $1\frac{1}{2}$ times as much as interest on the total investment at 8 per cent, and on farms of over 250 acres of crop land it averaged 48 per cent of the interest on the investment. On the entire group of 106 farms, averaging 145 acres of crop land, the food, fuel, and shelter furnished the family averaged 82 per cent of the interest on the average investment at 8 per cent.

Following is a list of the foods consumed by the average adult person on the 255 farms in North Carolina, Georgia, and Texas, mentioned above (two children of 12 years or under being considered equivalent to one adult).

Average annual consumption of various articles of food per adult person by 255 farm families in North Carolina, Georgia, and Texas.

Article.	Unit of measure.	Amount consumed per adult person.	Article.	Unit of measure.	Amount consumed per adult person.
Vegetables:			Fruit—Continued.		
Beans, green.....	Pecks.....	5.7	Grapes.....	Bushels....	0.25
Beets.....	do.....	3.5	Berries.....	Quarts.....	11.5
Cabbages.....	Heads.....	14	Cereals:		
Cucumbers.....	Pecks.....	2	Corn meal.....	Pounds....	136
Melons.....	Number....	15	Flour.....	do.....	224
Onions.....	Pecks.....	1.5	Sirup.....	Gallons....	4
Peas.....	do.....	1.13	Sugar (54 pounds)=sirup..	do.....	8.2
Potatoes (Irish).....	Bushels....	2	Dairy products:		
Potatoes (sweet).....	do.....	5.11	Butter.....	} = milk	482
Sweet corn.....	Dozen.....	6.8	Buttermilk.....		
Tomatoes.....	Pecks.....	4.1	Milk.....	Quarts....	12
Turnips.....	do.....	4.5	Beef.....	Pounds....	138
Fruit:			Pork and lard.....	do.....	
Apples.....	Bushels....	1.4	Poultry products:		
Pears.....	do.....	.3	Poultry.....	do.....	57.5
Peaches.....	do.....	1.5	Eggs.....	Dozen.....	28.4

THE VEGETABLE GARDEN.

In the colder parts of the country many farmers, knowing the value to health and happiness of a variety and abundance of freshly gathered vegetables for home consumption, not only provide a good summer garden but also go to considerable expense in building cold frames and hotbeds to give an early start to some of the spring and summer vegetables, and sometimes even to grow certain vegetables in the winter. In addition to these devices for lengthening the growing season, they provide winter storage for an ample supply of such fruits and vegetables as can be kept, although these safeguards add greatly to their cost.

The southern farmer has an advantage over the northern farmer in a long growing season and a short, mild winter, and does not require such extensive equipment for the maintenance of his supply of vegetables. With little extra effort he can have an abundance of fresh vegetables in great variety throughout the year, with very little need of artificial protection unless it be for a few weeks during the winter along the northern border of the cotton belt. Throughout the cotton area cabbage, collards, kale, spinach, turnips, parsnips, carrots, lettuce, and radishes will grow in the open in the winter.

The net returns for labor expended on a good farm garden are perhaps greater than those from any other area of equal size on the farm,, partly because of the more intensive character of the garden enterprise and partly because the garden can be cared for by labor that otherwise would not be utilized.

SIZE OF THE GARDEN.

The size of the garden necessary to supply vegetables for a family of a given number of persons will be influenced largely by the climatic conditions, the fertility of the soil, the likes and dislikes of the family, and the method of cultivation of the garden, whether largely by horse labor, by man labor, or by a combination of both.

There are very few detailed records of farm gardens giving the size and actual production and cost.

The farmers in the group of farms in Brooks County, Ga., mentioned above, planted an average of one-fourth of an acre in potatoes (mostly sweet potatoes) per adult person, or equivalent, in the family, and one-eighth acre in other vegetables. Potatoes to the value of \$3.55 per person were sold, the remainder being used on the farm. Watermelons were not included in the garden, as most of the farms grow melons for shipping, and the families were supplied from the farm crop. The 12 farmers who planted melons for home use alone planted 32 hills 10 by 10 feet, or a little over one-thirteenth of an

acre, for each adult, or adult equivalent, in the family. These Brooks County farms are on the lighter Coastal Plain soils, where yields are moderate, and the farmers made liberal provision for the family.

Department Bulletin 602 gives interesting and valuable information on the sizes of gardens and the value of products for some southern town families. One group of 35 town families is cited which raised an average of nearly \$50 worth of vegetables on gardens ranging in size from 300 to 499 square yards. A group of 543 town gardens, averaging 723 square yards, or about one-seventh of an acre, produced an average of \$29.87 worth of vegetables. The average cash outlay for these gardens was:

Labor	\$1. 51
Seeds	1. 51
Fertilizer 52
Total	3. 54

The labor expenditure was limited practically to the cost of having the garden plowed and harrowed for planting. Little or no labor was hired during the season, the planting and care of the garden in all cases being done by the family.

One of these home gardeners, a laborer at Charlotte, N. C., on five-eighths of an acre of ground, produced dry beans, peas, onions, cabbages, turnips, beets, cucumbers, tomatoes, sweet corn, and peppers to the value of \$92, at a cash expense of only 15 cents for some seed. This man is thrifty and saves most of his seed. These vegetables, with the exception of \$2.80 worth sold, were cared for and consumed by a family equivalent in size to seven and a half adult persons.

A driver at Cliffside, N. C., on a little over three-fourths of an acre, produced 11 kinds of vegetables, to the value of \$97.20, at a cash outlay of \$5 for preparation and \$2 for seeds. The family of four cared for the garden and consumed all the vegetables, with the exception of \$4.50 worth that were sold.

A gardener at Drayton, S. C., on a little less than three-fourths of an acre, produced 14 vegetables to the value of \$72.65, at a cash outlay of \$7.50 for preparation, \$3.20 for seeds, and \$6 for fertilizers. These vegetables were all consumed by the family, equivalent to six adult persons.

Another home gardener on $1\frac{1}{4}$ acres, with a family equivalent to five adult persons, produced vegetables to the value of \$86.90, at a cash expense of \$2.50 for preparation, \$1.60 for seeds, and \$3.10 for fertilizers, a total outlay of \$7.20. Twenty-eight dollars' worth of these vegetables were sold and 42 quarts were canned for winter use.

A clerk at Williamston, S. C., with a family equivalent to three adult persons, on one-third of an acre produced 10 bushels of sweet potatoes, 27 bushels of Irish potatoes, 4 bushels of green beans, 1 gallon of garden peas, 3 bushels of onions, 200 heads of cabbage, 10 pecks of turnips, 8 pecks of beets, 8 pecks of cucumbers, 26½ bushels of tomatoes, 12 cantaloupes, 24 dozen ears of sweet corn, 10 bushels of lettuce, 100 collards, 2 pecks of peppers, 1 bushel of okra, a few squashes, and 3 bushels of peanuts, valued altogether at \$89. The cash expenditure on this garden was for preparation, \$2; for seeds, \$4.80; for fertilizer, \$1.20; for extra labor, \$1.50; a total expenditure of \$9.50. Fifty-four dollars' worth of vegetables were sold and 100 quarts canned for winter use.

PLANNING THE GARDEN.

For ease in care of the farm garden and to save time and labor, it is desirable to lay it off so that it can be plowed and cultivated largely with horse tools. Plant everything in long, straight rows and make the rows far enough apart for horse implements in working the crops.

List the long-season crops in one group and the short-season and succession crops in another in the order of their planting dates and let this determine the order of planting in the garden. This will tend to keep the unplanted part in a single piece so that it will be more easily kept in condition for the later plantings and will make it possible to clear up larger areas for succession planting or for second-crop plantings.

For reference in planning the farm garden and determining the proper size for the family needs, the following average yields per 100 feet of row are given. Plan to have a surplus, then there will always be enough.

Yields of garden vegetables.

Vegetable.	Yield per 100 feet of row.	Vegetable.	Yield per 100 feet of row.
Asparagus.....bunches..	50	Melon:	
Beans, snap:		Muskmelon.....melons..	60
Spring.....pecks..	6	Watermelon.....do.....	15
Fall.....do.....	4	Okra.....pecks..	6
Beans, Lima, in pod.....do.....	7	Onions.....do.....	3
Beets:		Parsnips.....do.....	8
Thinnings for greens.....do.....	3	Peas in the pod.....do.....	2.5
Roots.....do.....	12	Peppers.....do.....	9
Cabbage:		Potatoes:	
Spring.....heads..	40	White.....do.....	3
Fall.....do.....	25	Sweet.....do.....	4
Carrot.....pecks..	5	Salsify (oyster plant).....do.....	5
Cauliflower.....heads..	25	Spinach.....do.....	8
Kohl-rabi.....pecks..	10	Squash:	
Corn, sweet.....ears..	50-75	Summer.....squash..	50
Cucumbers.....pecks..	7	Winter.....do.....	25
Eggplant.....fruits..	74	Tomatoes.....pecks..	12
Kale.....pecks..	12	Turnips.....do.....	10
Lettuce.....heads..	50-100		

The following table gives the earliest planting periods and the latest planting periods for the short season and succession crops, and the earliest planting period for long-season garden crops in the middle cotton belt.

Planting periods, width of row, and distance of plants in the row for garden vegetables in the middle cotton belt.

Vegetable.	Earliest planting period.	Latest planting period.	Distance apart.	
			Rows for horse cultivation.	Plants in the row.
			<i>Feet.</i>	
Cabbage.....	Jan. 15-Feb. 28..	Aug. 15-30.....	3	1½ to 2 feet.
Collard.....	Feb. 1-28.....	do.....	3	Do.
Kale.....	do.....	Oct. 1-30.....	3	1 to 1½ feet.
Onion.....	do.....	Oct. 1-15.....	3	3 inches.
Pea (English).....	Feb. 1-Mar. 15..	do.....	3	3 to 4 inches.
Potatoes (white).....	Feb. 1-28.....	Aug. 1-15.....	3	1 to 1½ feet.
Radish.....	do.....	Oct. 1-15.....	3	2 to 3 inches.
Turnip.....	do.....	do.....	3	3 to 6 inches.
Beet.....	Feb. 15-Mar. 15..	Aug. 1-30.....	3	6 to 8 inches.
Carrot.....	do.....	do.....	3	4 to 6 inches.
Cauliflower.....	do.....	do.....	3	1½ to 2 feet.
Kohl-rabi.....	do.....	do.....	3	4 to 8 inches.
Celery.....	do.....	Aug. 1-Sept. 30..	3	6 to 12 inches.
Lettuce.....	do.....	Oct. 1-15.....	3	8 to 12 inches.
Mustard.....	do.....	do.....	3	Do.
Spinach.....	do.....	do.....	3	4 to 6 inches.
Beans, snap.....	Mar. 1-30.....	Aug. 15-30.....	3	5 to 10 inches.
Corn, sweet.....	do.....	Aug. 1-15.....	3	12 to 18 inches.
Sweet potato.....	Mar. 15-Apr. 15..	July 15-30.....	3	Do.
Tomato.....	do.....	July 15-Aug. 15..	4	3 feet.
Asparagus.....	Feb. 15-Mar. 15..	do.....	4	2 feet.
Brussels sprouts.....	do.....	do.....	3	Do.
Parsnip.....	do.....	do.....	3	4 to 6 inches.
Salsify.....	do.....	do.....	3	Do.
Bean, lima.....	Mar. 15-Apr. 15..	do.....	4	4 feet.
Cucumber.....	do.....	do.....	6	15 to 18 inches.
Eggplant.....	do.....	do.....	3	18 to 24 inches.
Melon, water.....	do.....	do.....	9	9 feet.
Melon, musk.....	do.....	do.....	6	15 to 18 inches.
Okra.....	do.....	do.....	3	3 feet.
Pepper.....	do.....	do.....	3	12 to 18 inches.
Squash, summer.....	do.....	do.....	6	4 feet.
Squash, winter.....	do.....	do.....	9	9 feet.

For hand cultivation, the distance apart of the rows of kale, onion, radish, turnip, beet, carrot, celery, lettuce, mustard, spinach, parsnip, and salsify may be reduced to 18 or even 15 inches.

The following garden planting plan is suggested for an average family of 5 mature persons, or their equivalent, 2 children under 12 being regarded as one mature person.

Ease in cultivation with horse tools is provided for by making the rows 200 feet long and none of them less than 3 feet apart. If it is desired to do most of the work with hand tools the distances apart of the rows of the smaller vegetables may be reduced to 18 inches or even 15 inches in some cases, thus reducing the area covered by the garden.

Suggested planting of vegetables for a farm family of 5 adults or their equivalent in the middle cotton belt. Size of plot 200 feet long by 144 feet wide, rows 200 feet long.

Row No.	Row space.	Earliest planting period.	First crop.	Final plantings.	
				Period.	Crop.
	<i>Feet.</i>				
1	4	Feb. 15-Mar. 15..	150 feet asparagus, 50 feet herbs...		
2	3	Jan. 1-Feb. 28...	Cabbage, lettuce between cabbages	Aug. 1-15.....	Sweet corn.
3	3	Feb. 1-28.....	Early white potatoes.....	do.....	Do.
4	3	do.....	do.....	do.....	Do.
5	3	do.....	Early garden peas.....	Aug. 30.....	Cauliflower.
6	3	do.....	Early turnips (radishes to mark rows).	Aug. 15-30.....	Green beans.
7	3	do.....	Green onions (from sets).....	do.....	Cabbage.
8	3	Feb. 15-Mar. 15..	Spinach.....	do.....	Do.
9	3	do.....	Cauliflower.....	Sept. 15-Oct. 15.	Spinach.
10	3	do.....	100 feet early beets, 100 early carrots.		
11	3	do.....	Dry onions from seed (radishes to mark rows).		
12	3	do.....	do.....		
13	3	do.....	100 feet parsnip, 100 feet salsify (radishes to mark rows).		
14	3	Mar. 1-30.....	Medium garden peas.....	Aug. 1-30.....	Celery.
15	3	do.....	Snap beans.....	Oct. 1-15.....	Turnip.
16	3	do.....	Early sweet corn.....	do.....	Kale.
17	3	Mar. 15-Apr. 15..	Early sweet potato.....	do.....	Green onions.
18	3	do.....	do.....	do.....	Beets.
19	3	Apr. 1-30.....	Medium early snap beans.....	do.....	Collards.
20	3	do.....	Medium early sweet corn.....		
21	3	do.....	do.....		
22	4	Mar. 15-Apr. 15..	Early tomatoes.....		
23	4	do.....	Medium early tomatoes.....		
24	4	do.....	Pole Lima beans.....		
25	3	do.....	100 feet egg plant, 100 feet pepper.		
26	3	do.....	Okra.....		
27	6	do.....	100 feet cucumber, 100 feet summer squash.		
28	6	do.....	Muskmelon.....		
29	9	do.....	Watermelon.....		
30	9	do.....	do.....		
31	9	do.....	do.....		
32	9	do.....	Winter squash.....		
33	4	May 1-30.....	Main crop tomatoes.....		
34	4	do.....	do.....		
35	3	do.....	Third planting sweet corn.....		
36	3	do.....	do.....		
	144				

A garden laid out according to this plan would contain a little less than two-thirds of an acre. In addition it is advised that one-half acre of late sweet potatoes and one-third of an acre of late white potatoes be planted to provide a winter supply of these vegetables. It is suggested that cowpeas or some other catch crop be planted between the rows of the long-season crops at their last cultivation and that fall and winter cover crops be planted on ground not occupied by vegetables all the season, these crops to be turned under for improving the soil.

In the northern part of the cotton belt a desirable feature would be a cold frame or hotbed to give an early start to early cabbage, cauliflower, lettuce, tomatoes, egg plants and peppers.

It is not the function of this bulletin to discuss varieties or methods of cultivation and care of vegetables. For this information the

reader is referred to Farmers' Bulletin 934, United States Department of Agriculture, on Home Gardening in the South, and to special bulletins of the State Colleges and Experiment Stations on the subject.

THE FRUIT GARDEN.

Every farm should have a fruit garden as well as a vegetable garden, and it is suggested that for the average farm family one-half acre be devoted to this purpose.

Extending the lines of the above-suggested vegetable garden for 150 feet will give a space 150 by 144 feet, or practically one-half acre. The following plan is suggested for the fruit garden:

- Space 15 feet.*
First row, 5 apple trees, 30 feet apart.
- Space 30 feet.*
Second row, 5 apple trees, 30 feet apart.
- Space 25 feet.*
Third row, 3 pear, 2 fig, 2 plum, 20 feet apart.
- Space 20 feet.*
Fourth row, 3 Japanese persimmon, 4 peach, 20 feet apart.
- Space 20 feet.*
Fifth row, 7 peach, 20 feet apart.
- Space 15 feet.*
Sixth row, 14 grape vines, 10 feet apart.
- Space 10 feet.*
Seventh row, 25 dewberries, 5 feet apart, 1 Scuppernong grape.
- Space 9 feet.*

Strawberries may be planted between the rows of fruit trees until the trees become so large as to shade the ground.

For varieties, culture, and care of these fruits the reader is referred to special bulletins of the State Colleges and Stations. The above plan of fruit garden is adapted from Extension Service Circular 13 of the Alabama Polytechnic Institute. The reader is referred to this circular for further suggestions on the arrangement of the fruit garden and for suggestions on varieties of fruits and their care and culture.

CEREALS.

Twelve to eighteen bushels, or practically one acre, of corn should be provided for the average family to fully supply meal for the family and provide toll for grinding and seed for planting.

It will probably not be practicable to grow wheat for the family flour in all parts of the South, but on the heavier soils and in regions where wheat does fairly well and there are local facilities for grinding, at least 35 bushels or 3 acres of wheat at the average yield of

about 12 bushels per acre should be provided per family for family needs, toll for grinding, and seed for replanting.

SIRUP AND SUGAR.

It was found that the average adult person in 255 southern families consumed 4 gallons of sirup and 54 pounds of sugar per year. The sugar was for the most part bought of stores. Now this sugar can be easily manufactured on the farm by boiling sirup a little longer, until it granulates. One gallon of sugar-cane sirup will make 6.6 pounds of sugar, and 8.2 gallons of sirup will supply 54 pounds of sugar consumed by the average person. This with the 4 gallons consumed as sirup will mean the provision for 12.2 gallons per person to supply sirup and sugar, or for an average family of 5 adult persons, 61 gallons of sirup. One-half acre of sugar cane at average yields will produce this sirup and sugar.

ANIMAL FOODS FOR THE FAMILY.

Farm management studies indicate that farms which carry enough productive live stock to furnish milk, meat, poultry, and eggs for the family and have a surplus for sale, pay better than those that do not follow this practice.

MILK, BUTTER, AND COTTAGE CHEESE.

In planning to provide dairy products for the home, the size of the family, size of the farm, pasture facilities, market for surplus products, etc., must be considered. In these brief suggestions no attempt will be made to consider them all. A good equipment of family live stock is suggested for the average family, and it is left to the farmer to use his good judgment in adjusting the suggested plant to local conditions and to suit the needs of his individual farm.

The plan suggested is that two cows be provided for each average farm family, insuring an ample milk supply every day in the year; that they freshen six months apart, preferably spring and fall; that they average 2 gallons each of milk per day for 10 months in the year; and that they be milked for an average of 6 years and then turned into beef.

If these cows begin to give milk when between two and three years of age, and are turned into beef during the years when they become eight years old, they will have produced milk practically six years, and if a difference of three years is maintained between their ages, it will be necessary to save a calf every three years to replace them.

On this basis an average of four to five calves may be expected from two cows every three years, with the probability that at least

two of them will be heifer calves, which will be ample to maintain the family herd of two cows.

High-grade community bulls of the dairy type should be maintained on farms and by farmers particularly adapted to their care.

There will be an average of three to four calves to be disposed of during each three-year period. When there is plenty of surplus milk some of these calves will be made into veal. If there is plenty of pasture and cheap roughage on the farm, some of the calves will be grown to feeder size to sell to farmers making a business of feeding, or they may be fattened on the home farm. The cows when they have passed their usefulness as milkers will be fattened on the farm or sold to feeders, who will convert them into beef. A supply of surplus calves of the kind this plan will produce will soon develop those farms in the community that are adapted to it into cattle-raising and cattle-feeding farms.

Some farmers will not care to raise their dairy cows but will prefer to buy them after they have reached the milking age. If such farmers will maintain community bulls of a beef type, the calves will be in greater demand among beef-producing farms and will produce a better grade of beef than pure dairy stock.

One community of farmers in the cotton belt takes care of its beef needs in the following manner: A beef club of 15 farmers was formed. Each member of the club agrees to grow, fatten, and dress at least one beef animal every 15 months for distribution among the members of the club. By following this system in regular rotation there is fresh beef for distribution every month.

Such plans as that outlined above systematically carried out, will go a long way toward furnishing the farm and a large part of the nonproducing village and town population with dairy products and beef. There are farms in nearly every southern community on which are kept enough cattle to supply the family needs, but many do not measure up to this standard.

PORK AND PORK PRODUCTS.

To supply the pork and pork products for the average farm family at least one pig should be raised per adult person or equivalent. This should provide the 138 pounds of pork products consumed by the average adult (see page 4), with a small surplus for sale.

If the family is a small one it may be more satisfactory to buy the pigs than to produce them on the farm, but in the case of a large family it will pay to keep a brood sow to raise the pigs. In most communities in the cotton States there is room for at least one farmer to do a thriving business by producing pigs for sale as weanlings to neighboring farmers.

The few pigs necessary to supply pork products for home consumption can live largely on waste products from the farm, garden, and orchard, and on scraps from the kitchen.

CHICKENS AND EGGS.

A flock of 30 to 50 fowls (exclusive of young chickens) properly selected and cared for will furnish all the eggs and poultry meat needed and some surplus to exchange for groceries. A flock of this size can be kept at small cost, since they will obtain part of their feed from insects, weeds and weed seeds, waste grain in the barnyard, etc. They may be cared for entirely by members of the family who take no part in the field work. Under such circumstances the keep of a small flock costs very little, and such a flock will add greatly to the supply of food on the farm.

FEED FOR THE FAMILY LIVE STOCK.

The feeds suggested below for the family live stock are not necessarily the best for all farms and all conditions. They are suggested simply because they are good staple feeds and also for the purpose of illustrating the method of procedure in making provision for the needs of the farm. Other feeds of equivalent feeding value may be substituted according to the judgment of the person making provision for the farm needs.

THE COWS.

Feed for the two cows, and young stock equivalent to one-third of a mature cow per year, is calculated on the basis of pasture for the 6 summer months, 10 pounds of cowpea hay, 5 pounds of oat hay, and 10 pounds of corn roughage per day for each cow for the remaining 180 days of fall, winter, and spring, and 1 pound of grain per 3 pints or 3 pounds of milk per day for the cows giving milk for the milking period of 44 weeks, the grain feed to be, say, three-fifths corn-and-cob meal and two-fifths cottonseed meal or their equivalents.

This will call for 1 ton of corn-and-cob meal and 1,234 pounds of cottonseed meal and 5.25 tons of roughage constituted of 4,200 pounds of corn roughage, 2,100 pounds of oat hay, and 4,200 pounds of cowpea or velvet bean hay.

On the basis of average yields per acre for the cotton States of $17\frac{1}{2}$ bushels of corn, 20 bushels of oats, 12 bushels of wheat, three-fourths of a ton of oat hay, three-fourths of a ton of cowpea hay, and 200 pounds of cottonseed meal, to feed the family dairy herd will require 2 acres of corn, $6\frac{1}{4}$ acres of cotton, 1.5 acres of oat hay, 3 acres of cowpea hay, and the roughage from about 7 acres of corn.

These acreages should furnish sufficient grain for feed, toll for grinding, and seed for the next year's planting, besides sufficient roughage for liberal feeding.

A good Bermuda pasture of 5 acres or its equivalent in other pasture should be provided. This will provide summer grazing for the cows, the hogs, and the poultry. Two acres in rye, corn, and sorghum to be fed green would help out in case of short pasture during the spring and summer. (For aid and instruction on the feeding and care of the cows see Farmers' Bulletin 743 on the Feeding of Dairy Cows.)

THE HOGS.

The pigs will secure a large part of their feed by grazing in the cow pasture, on winter cover crops and on cowpeas and peanuts grown between the corn rows. Allowing 5 bushels of corn per head for finishing the 5 pigs necessary for an average family will require 25 bushels, or the corn from 1.5 acres.

THE CHICKENS.

The flock of fowls will pick up much of their feed from waste scattered over the farm. However, to insure good production of eggs and chickens, it will be wise to provide 70 pounds of grain per fowl, or, say, three-fourths bushel of corn and 1 bushel of oats per fowl for the 40 fowls. This will mean 30 bushels of corn and 40 bushels of oats, which at the average yields will require 2 acres of corn and 2 acres of oats.

THE WORK STOCK.

The work stock in the South is usually fed on grain and dry roughage during the fall, winter, and early spring. During the remainder of the year this is supplemented on many farms by pastures and green feed such as rye, sorghum, and corn.

A fair provision per head of work stock would be 60 bushels of corn, 40 bushels of oats, and 3 tons of roughage—say $1\frac{1}{2}$ tons of cowpea hay or velvet bean hay, 1 ton of oat straw, and one-half ton of corn roughage. To provide this feed at average yields will require per head of work stock $3\frac{1}{2}$ acres of corn, 2 acres of oats, 2 acres of cowpea hay and 1 acre of pasture and green feed.

ACRES NEEDED TO SUPPORT A 2-MULE FAMILY FARM.

On the basis of the garden and feeding program suggested and at average yields per acre for the South, the following acreages of

food and feed crops will be required to feed properly a 2-mule family farm, averaging 5 adult persons or their equivalent:

Garden:	Acres.	Acres.
White potatoes-----	$\frac{1}{3}$	
Sweet potatoes-----	$\frac{1}{2}$	
Other vegetables-----	$\frac{2}{3}$	
Fruit-----	$\frac{1}{2}$	
		2
Corn with cowpeas:		
Grain for family (meal)-----	1	
For 2 cows-----	2	
For 40 chickens-----	2	
For 5 hogs-----	$1\frac{1}{2}$	
For 2 head work stock-----	7	
		$13\frac{1}{2}$
Roughage for cows and work stock-----		(13 $\frac{1}{2}$)
Sugar cane, sirup and sugar for family-----		$\frac{1}{2}$
Oats and oat hay:		
For cows-----	$1\frac{1}{2}$	
For chickens-----	2	
For work stock-----	4	
		$7\frac{1}{2}$
Cowpea or velvet bean hay: ¹		
For cows-----	(3)	
For work stock-----	(4)	
		(7)
Solling crops, for cows-----		2
Cotton seed, for cows ¹ -----		(6 $\frac{1}{2}$)
Pasture:		
For cows and hogs-----	5	
For work stock-----	2	
		7

This totals practically $25\frac{1}{2}$ acres of crop land and 7 acres of pasture, or $12\frac{1}{4}$ acres of crop land and $3\frac{1}{2}$ acres of pasture per head of work stock. A second crop is taken from 7 of the $25\frac{1}{2}$ acres and cowpeas or peanuts should be planted between the corn rows. This calculation aims to furnish the family liberally with food and to feed the farm live stock liberally. The vegetable and fruit gardens provided for are of sufficient size and variety of product to furnish an ample supply of fresh vegetables and fruits for the average cotton-belt family throughout the year, as well as enough for canning purposes. There should be a surplus of garden stuff, dairy and poultry products to sell or exchange for groceries.

The acreages are calculated on the basis of average yields. Average yields have been used simply by way of illustration. Many farms produce better yields, and those with average or lower than the average yields should better them. With higher yields less acreage will be needed to furnish family and farm needs, and the esti-

¹ Figures in parentheses are for by-products or second crops.

mates given above can be cut down or maintained and the surplus sold.

Farm management studies in the Southern States indicate that the best paying farms not only produce the necessary farm feeds but also have a surplus to sell, and usually on those farms that have a surplus the live stock is of better quality and is better cared for than on those farms that buy staple farm feed.